

AMENDMENTS TO THE CLAIMS

1-8. (Canceled)

9. (Currently Amended) An image forming method, comprising the steps of:

- a) multi-level quantizing a multi-tone image by an error diffusion method; and
- b) representing each pixel of the thus-quantized image having a quantized level higher than 0 using a dot which is larger as the quantized level thereof is higher,

wherein occurrence of dots having a specific size is repressed in a specific shade region relating to the dots, and

wherein a degree of repressing occurrence of the dots having the specific size is changed according to a feature of the image; and wherein occurrence of the dots having the specific size is repressed only for a picture region of the image.

10. (Currently Amended) An image forming method, comprising the steps of:

- a) multi-level quantizing a multi-tone image by an error diffusion method; and

b) representing each pixel of the thus-quantized image having a quantized level higher than 0 using a dot which is larger as the quantized level thereof is higher,

wherein occurrence of dots having a specific size is repressed in a specific shade region relating to the dots, and

wherein a degree of repressing occurrence of the dots having the specific size is changed according to a feature of the image; and wherein the degree of repressing occurrence of the dots having the specific size is made weaker for a character region of the image than for a picture region of the image.

11. (Currently Amended) An image forming method, comprising the steps of:

a) multi-level quantizing a multi-tone image by an error diffusion method; and

b) representing each pixel of the thus-quantized image having a quantized level higher than 0 using a dot which is larger as the quantized level thereof is higher,

wherein occurrence of dots having a specific size is repressed in a specific shade region relating to the dots,

wherein a degree of repressing occurrence of the dots having the specific size is changed according to a feature of the image[[;]], and

wherein occurrence of the dots having the specific size is repressed only for a non-edge region of the image.

12-16. (Canceled)

17. (Currently Amended) An image processing method, comprising the steps of:

a) multi-level quantizing multi-tone image data by an error diffusion method; and

b) repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels; and

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

~~The method as claimed in claim 15, wherein occurrence of the one or more specific quantized levels is repressed for a medium level region of the image data.~~

18. (Canceled)

19. (Original) An image processing method, comprising the steps of:

a) multi-level quantizing multi-tone image data by an error diffusion method; and

b) repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels,

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

~~The method as claimed in claim 15, wherein occurrence of the one or more specific quantized levels is repressed for medium and high level regions of the image data.~~

20-24. (Canceled)

25. (Currently Amended) An image processing method, comprising the steps of:

- a) multi-level quantizing multi-tone image data; and
- b) repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels,

wherein a degree of repressing occurrence of the one or more specific quantized levels is changed according to a feature of the image[[:]], and

wherein occurrence of the one or more specific quantized levels is repressed only for a picture region of the image.

26. (Currently Amended) An image processing method, comprising the steps of:

- a) multi-level quantizing multi-tone image data; and
- b) repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels,

wherein a degree of repressing occurrence of the one or more specific quantized levels is changed according to a feature of the image[[:]], and

wherein the degree of repressing occurrence of the one or more specific quantized levels is made weaker for a character region of the image than for a picture region of the image.

27. (Currently Amended) An image processing method, comprising the steps of:

- a) multi-level quantizing multi-tone image data; and
- b) repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels,

wherein a degree of repressing occurrence of the one or more specific quantized levels is changed according to a feature of the image[[:]], and

wherein occurrence of the one or more specific quantized levels is repressed only for a non-edge region of the image.

28. (Original) The method as claimed in claim 17, wherein re-quantization is performed for the one or more specific quantized levels, occurrence of which is to be repressed.

29. (Canceled)

30. (Original) The method as claimed in claim 19, wherein re-quantization is performed for the one or more specific quantized levels, occurrence of which is to be repressed.

31-34. (Canceled)

35. (Original) An image processing apparatus, comprising:

a first part multi-level quantizing multi-level input image data by an error diffusion method; and

a second part repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized level,

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

~~The apparatus as claimed in claim 33, wherein said second part represses occurrence of the one or more specific quantized levels for a medium level region of the image data.~~

36. (Canceled)

37. (Original) An image processing apparatus, comprising:

a first part multi-level quantizing multi-level input image data by an error diffusion method; and

a second part repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels,

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

The apparatus as claimed in claim 33, wherein said second part represses occurrence of the one or more specific quantized levels for medium and high level regions of the image data.

38-42. (Canceled)

43. (Currently Amended) An image processing apparatus, comprising:

a first part multi-level quantizing multilevel input image data; and

a second part repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels[[;]].

wherein said second part changes degrees of repressing occurrence of the one or more specific quantized levels according to a feature of the image[[;]], and

wherein said second part represses occurrence of the one or more specific quantized levels only for a picture region of the image.

44. (Currently Amended) An image processing apparatus, comprising:

a first part multi-level quantizing multi-level input image data; and

a second part repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels[[;]].

wherein said second part changes degrees of repressing occurrence of the one or more specific quantized levels according to a feature of the image[[;]], and

wherein said second part makes the degrees of repressing occurrence of the one or more specific quantized levels weaker for a character region of the image than for a picture region of the image.

45. (Currently Amended) An image processing apparatus, comprising:

a first part multi-level quantizing multi-level input image data; and

a second part repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels[[;]],

wherein said second part changes degrees of repressing occurrence of the one or more specific quantized levels according to a feature of the image[[;]], and

wherein said second part represses occurrence of the one or more specific quantized levels only for a non-edge region of the image.

46. (Currently Amended) An image processing apparatus, comprising:

a first part multi-level quantizing multi-level input image data; and

a second part repressing occurrence of one or more specific quantized levels for a specific level region of the image data relating to the one or more specific quantized levels[[;]], and

wherein said second part changes degrees of repressing occurrence of the one or more specific quantized levels according to a specified output mode.

47. (Original) The apparatus as claimed in claim 35, wherein said second part performs re-quantization for the one or more specific quantized levels, occurrence of which is to be repressed.

48. (Canceled)

49. (Original) The apparatus as claimed in claim 37, wherein said second part performs re-quantization for the one or more specific quantized levels, occurrence of which is to be repressed.

50-54. (Canceled)

55. (Original) The apparatus as claimed in claim 46, wherein said second part performs re-quantization for the one or more specific quantized levels, occurrence of which is to be repressed.

56-60. (Canceled)

61. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels, as the need arises, and outputting the thus-obtained data as output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part,

wherein said third part has a signal indicating a feature of an image region to which the target pixel belongs input thereto from the outside, and compares a threshold, relating to each of said one or more specific quantized levels, determined based on a parameter relating to said each of said one or more specific quantized levels determined according to the feature indicated by said signal, the number provided by said fifth part and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more

specific quantized levels being repressed in a degree according to said feature in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part[[;]], **and wherein:**

wherein said signal indicates whether the image region to which the target pixel belongs is a character region or a picture region[[;]], and

wherein said parameter relating to each of said one or more specific quantized levels is determined such that occurrence of said each of said one or more specific quantized levels is repressed only for the picture region.

62. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels, as the need arises, and outputting the thus-obtained data as output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part,

wherein said third part has a signal indicating a feature of an image region to which the target pixel belongs input thereto from the outside, and compares a threshold, relating to each of said one or more specific quantized levels, determined based on a parameter relating to said each of said one or more specific quantized levels determined according to the feature indicated by said signal, the number provided by said fifth part and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a degree according to said feature in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part[;],
and wherein:

wherein said signal indicates whether the image region to which the target pixel belongs is a character region or a picture region[;], and

wherein said parameter relating to each of the one or more specific quantized levels is determined such that the degree of repressing occurrence of said each of said one or more specific quantized levels is made weaker for the character region than for the picture region.

63. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels, as the need arises, and outputting the thus-obtained data as output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part,

wherein said third part has a signal indicating a feature of an image region to which the target pixel belongs input thereto from the outside, and compares a threshold, relating to each of said one or more specific quantized levels, determined based on a parameter relating to said each of said one or more specific quantized levels determined according to the feature indicated by said signal, the number provided by said fifth part and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more

specific quantized levels being repressed in a degree according to said feature in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part[[;]], and wherein:

wherein said signal indicates whether the image region to which the target pixel belongs is an edge region or a non-edge region[[;]], and

wherein said parameter relating to each of the one or more specific quantized levels is determined such that occurrence of said each of said one or more specific quantized levels is repressed only for the non-edge region.

64. (Original) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels, as the need arises, and outputting the thus-obtained data as an output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part,

wherein said third part has a signal indicating an output mode input thereto from the outside, and compares a threshold, relating to each of said one or more specific quantized levels, determined based on a parameter relating to said each of said one or more specific quantized levels determined according to the output mode indicated by said signal, the number provided by said fifth part and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a degree according to said output mode in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part.

65. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, to another quantized level, for one or more specific quantized levels other

than the highest quantized level and quantized level 0, as the need arises, and outputting the thus-obtained data as an output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part,

wherein said third part compares a threshold, relating to each of said one or more specific quantized levels, determined based on the number provided by said fifth part, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part.

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

The image processing apparatus as claimed in claim 56, wherein:

 said second part performs 4-level quantization[[;]].

the re-quantization performed by said third part is performed for the quantized level 1[[;]], and

occurrence of the quantized level 1 is repressed in a medium level region of the input image data.

66. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels other than the highest quantized level and quantized level 0, as the need arises, and outputting the thus-obtained data as output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part,

wherein said third part compares a threshold, relating to each of said one or more specific quantized levels, determined based on the number provided by said fifth part and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part.

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

~~The image processing apparatus as claimed in claim 58, wherein:~~

 said second part performs 4-level quantization[[:]],

 the re-quantization performed by said third part is performed for the quantized level 1[[:]], and

 occurrence of the quantized level 1 is repressed in a medium level region of the input image data.

67. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels other than the highest quantized level and quantized level 0, as the need arises, and outputting the thus-obtained data as an output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels for each quantized level in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part,

wherein said third part compares a threshold, relating to each of said one or more specific quantized levels, determined based on the total number of pixels of each of said one or more specific quantized levels and one or more other quantized levels near to said each of the one or more specific quantized levels and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part.

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

The image processing apparatus as claimed in claim 59, wherein:

 said second part performs 4-level quantization[[;]].

 the re-quantization performed by said third part is performed for the quantized level 1[[;]], and

 occurrence of the quantized level 1 is repressed in a medium level region of the input image data.

68. (Original) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels, as the need arises, and outputting the thus-obtained data as output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part.

wherein said third part has a signal indicating a feature of an image region to which the target pixel belongs input thereto from the outside, and compares a threshold, relating to each of said one or more specific quantized levels, determined based on a parameter relating to said each of said one or more specific quantized levels determined according to the feature indicated by said signal, the number provided by said fifth part and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a degree according to said feature in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part,

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

The image processing apparatus as claimed in claim 60, wherein:

said second part performs 4-level quantization[[:]];

the re-quantization performed by said third part is performed for the quantized level 1[[:]], and

occurrence of the quantized level 1 is repressed in a medium level region of the input image data.

69. (Original) The image processing apparatus as claimed in claim 64, wherein:

said second part performs 4-level quantization;

the re-quantization performed by said third part is performed for the quantized level 1; and

occurrence of the quantized level 1 is repressed in a medium level region of the input image data.

70. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, to another quantized level, for one or more specific quantized levels other

than the highest quantized level and quantized level 0, as the need arises, and outputting the thus-obtained data as an output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part.

wherein said third part compares a threshold, relating to each of said one or more specific quantized levels, determined based on the number provided by said fifth part, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part,

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

~~The image processing apparatus as claimed in claim 56, wherein:~~

 said second part performs 4-level quantization[[;]].

the re-quantization performed by said third part is performed for the quantized level 1 and quantized level 2[[:]].

occurrence of the quantized level 1 is repressed in a medium level region of the input image data[[:]], and

occurrence of the quantized level 2 is repressed in a high level region of the input image data.

71. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels other than the highest quantized level and quantized level 0, as the need arises, and outputting the thus-obtained data as output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the

periphery of a target pixel, and providing the thus-obtained number to said third part.

wherein said third part compares a threshold, relating to each of said one or more specific quantized levels, determined based on the number provided by said fifth part and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part.

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

The image processing apparatus as claimed in claim 58, wherein:

 said second part performs 4-level quantization[[;]].

 the re-quantization performed by said third part is performed for the quantized level 1 and quantized level 2[[;]].

 occurrence of the quantized level 1 is repressed in a medium level region of the input image data[[;]], and

occurrence of the quantized level 2 is repressed in a high level region of the input image data.

72. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels other than the highest quantized level and quantized level 0, as the need arises, and outputting the thus-obtained data as an output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels for each quantized level in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part,

wherein said third part compares a threshold, relating to each of said one or more specific quantized levels, determined based on the total number of pixels of each of said one or more specific quantized levels and one or more other quantized levels near to said each of the one or more specific quantized levels and the level of the input image data, with the level of the image data to

which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part.

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

~~The image processing apparatus as claimed in claim 59, wherein:~~

 said second part performs 4-level quantization[[;]].

 the re-quantization performed by said third part is performed for the quantized level 1 and quantized level 2[[;]].

 occurrence of the quantized level 1 is repressed in a medium level region of the input image data[[;]], and

 occurrence of the quantized level 2 is repressed in a high level region of the input image data.

73. (Currently Amended) An image processing apparatus, comprising:

a first part adding an error to input image data;

a second part multi-level quantizing the image data to which the error is already added by said first part, using a plurality of quantization thresholds;

a third part re-quantizing the quantized data provided by said second part, into another quantized level, for one or more specific quantized levels, as the need arises, and outputting the thus-obtained data as output image data;

a fourth part obtaining the error to be added to the input image data, from the output image data and image data to which the error is already added by said first part, and providing the thus-obtained error to said first part; and

a fifth part detecting, from the output image data, the number of pixels quantized to be higher than the quantized level 0 in a specific region in the periphery of a target pixel, and providing the thus-obtained number to said third part.

wherein said third part has a signal indicating a feature of an image region to which the target pixel belongs input thereto from the outside, and compares a threshold, relating to each of said one or more specific quantized levels, determined based on a parameter relating to said each of said one or more specific quantized levels determined according to the feature indicated by said signal, the number provided by said fifth part and the level of the input image data, with the level of the image data to which the error is already added, and, thereby, determines whether re-quantization for said each of said one or more specific quantized levels is necessary, occurrence of each of said one or more specific quantized levels being repressed in a degree according to said feature in a specific level region of the input image data relating to said each of said one or more specific quantized levels through the re-quantization by said third part.

wherein re-quantization is performed, after the multi-level quantization is performed, in which, for a pixel having a specific quantization level, image data having an error added thereto according to the error diffusion method is compared with a threshold, and a final output value is determined, and

~~The image processing apparatus as claimed in claim 60, wherein:~~

 said second part performs 4-level quantization[[;]],

 the re-quantization performed by said third part is performed for the quantized level 1 and quantized level 2[[;]],

 occurrence of the quantized level 1 is repressed in a medium level region of the input image data[[;]], and

 occurrence of the quantized level 2 is repressed in a high level region of the input image data.

74. (Original) The image processing apparatus as claimed in claim 64, wherein:

 said second part performs 4-level quantization;

 the re-quantization performed by said third part is performed for the quantized level 1 and quantized level 2;

 occurrence of the quantized level 1 is repressed in a medium level region of the input image data; and

occurrence of the quantized level 2 is repressed in a high level region of the input image data.

75-79. (Canceled)

80. (Original) The image processing apparatus as claimed in claim 64, further comprising a sixth part which forms an image, from the image output data, using dots for pixels which dots are larger as the pixels have higher quantized levels.

81-84. (Original)

85. (Original) The image processing apparatus as claimed in claim 64, further comprising a sixth part generating the input image data by optically scanning an original.

86-89. (Canceled)

90. (Original) The image processing apparatus as claimed in claim 64, further comprising:

a sixth part generating the input image data by optically scanning an original; and

a seventh part forming an image, from the image output data, using dots for pixels which dots are larger as the pixels have higher quantized levels.

91-94. (Canceled)

95. (Original) A computer-readable recording medium storing therein a program for causing a computer to carry out the function of each part of the image processing apparatus as claimed in claim 64.